Some Medical Inpatients With Unhealthy Alcohol Use May Benefit From Brief Intervention

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Background

- Professional organizations recommend screening and brief intervention (BI) for all adults with unhealthy alcohol use (UAU).

- Large federal efforts are underway to implement screening of all patients, with BI (including referral) for those with UAU.

- But, the best evidence for the efficacy of BI is limited to those with nondependent use in primary care settings (Kaner et al. 2007).

Background (cont.)

- The evidence for efficacy of BI…
  - Is mixed in emergency department and hospital settings (Daeppen et al. 2007; Emmen et al. 2004), and
  - Suggests small or no benefit in studies that minimize exclusion criteria (Beich et al. 2007; Saitz et al. 2007).

- The efficacy of BI may also be moderated by patient characteristics (e.g., sociodemographics, severity, comorbidity, readiness to change).

Objective

- To assess moderators of brief intervention efficacy in medical inpatients with unhealthy alcohol use who are identified by screening
  - To identify subgroups of inpatients who may benefit from brief intervention

Methods

- Secondary analysis of a randomized controlled trial in general medical inpatients that found <u>no significant effect</u> of BI on…
  - Consumption
  - Consequences
  - Readiness to change
  - Physical or mental health-related quality of life
  - Healthcare utilization
  - Receipt of treatment for those with dependence

Saitz et al. Ann Intern Med 2007;146:167-76
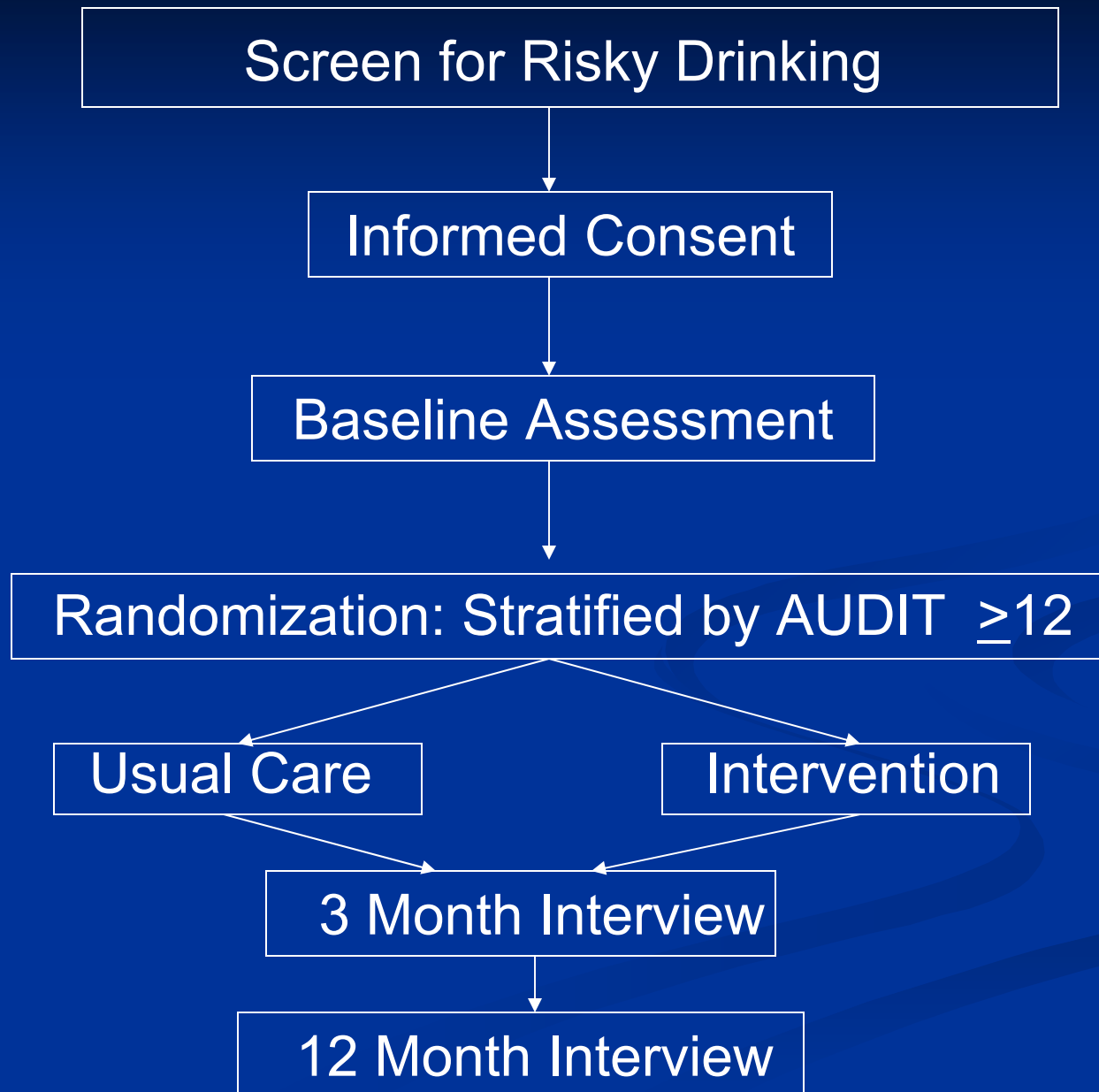
Eligibility

- Current risky drinking amounts
    - >14/>4 drinks per week/occasion for men $\leq$65; else >11/>3

- 18 years or older

- Medicine inpatients

- Able to be interviewed

- Provide 2 contact persons

- Speak English or Spanish

- Mini-Mental State Examination (MMSE) score $\geq$21

Note: Readiness to change was NOT an entry criterion.

Intervention

- Motivational interviewing, ≤30 minutes

- Feedback based on consumption, AUDIT score, readiness, Short Inventory of Problems, and alcohol-related medical diagnoses

- Change plan, mailed

- Discussion with hospital staff

- Review of audiotapes with research psychologist

AUDIT=Alcohol Use Disorders Identification Test

Outcomes

- Receipt of alcohol treatment at 3 months (dependent subjects only)

- Consumption (30-day) at 3 and 12 months

- Changes from enrollment to 3 and 12 months in…
  - alcohol problems
  - readiness to change
  - physical and mental health-related quality of life
  - healthcare utilization (emergency department, hospital)

Analyses

- Logistic and linear regression, intention to treat, stratified by alcohol dependence
  - Pre-specified subgroup analyses
    - testing interaction terms (between subject characteristics and intervention)
    - analyses stratified by factors of interest
    - Adjusted for potential confounders, when possible

Analyses (cont.)

- Adjusted for baseline imbalances when possible
  - Of 80 comparisons (40 per stratum) of baseline characteristics, 6 were p<0.05
    - Among subjects *without dependence*, controls had lower mental health-related quality of life.
    - Among subjects *with dependence*, controls were less likely to be male, have received recent alcohol treatment, to have an alcohol-attributable medical diagnosis, a family history of alcoholism, or to have substantial depressive symptoms.

Results

- Of 341 subjects enrolled, 172 were randomized to intervention, 169 to the control group; 77% had dependence.

- Over 12 months, 11 died; 90% (308) of all enrolled subjects completed a follow-up.

  - Subjects who completed any follow-up were generally similar to those lost to follow-up.

Receipt of Alcohol Treatment
Dependent Subjects at 3 months
N=209

- 52% of intervention vs. 39% of control subjects received alcohol treatment by 3 months.

  - AOR, 1.6; 95% CI, 0.9-2.8; *P*=0.08

Receipt of Alcohol Treatment Dependent Subjects at 3 months

Stratification	Unadjusted ORs (95% CI)
Sex Men (n=145) Women (n=64)	1.2 (0.6-2.4) 4.0 (1.3-11.8)
Age <44 (n=93) ≥44 (n=116)	3.3 (1.4-7.7) 1.0 (0.5-2.0)
Cognitive Function Higher (MMSE ≥27) (n=108) Lower (MMSE <27) (n=101)	2.1 (0.7-5.8) 0.74 (0.3-2.2)

Receipt of Alcohol Treatment Dependent Subjects at 3 months

Stratification	Unadjusted ORs (95% CI)
Sex and Age	
Men <44 (n=58)	3.2 (1.1-9.3)
Men ≥44 (n=87)	0.6 (0.3-1.5)
Women <44 (n=35)	4.4 (0.9-21.2)
Women ≥44 (n=29)	3.7 (0.8-17.4)

Receipt of Alcohol Treatment Dependent Subjects at 3 months

- Brief intervention effects were not moderated by:
  - Mental health-related quality of life
  - Homelessness
  - Heroin or cocaine use
  - Readiness to change

Receipt of Alcohol Treatment Dependent Subjects at 3 months

Stratification	Unadjusted ORs (95% CI)
Sex and Alcohol Attributable Medical Diagnosis	
Men with a diagnosis (n=82)	1.1 (0.5-2.7)
Men without a diagnosis (n=63)	1.1 (0.4-3.1)
Women with a diagnosis (n=29)	**35.7 (3.5-368.8)**
Women without a diagnosis (n=35)	0.7 (0.1-3.3)
Sex and Cognitive Function (CF)	
Men with higher CF (n=76)	1.5 (0.6-3.7)
Men with lower CF (n=69)	1.0 (0.4-2.6)
Women with higher CF (n=32)	**6.7 (1.3-34.0)**
Women with lower CF (n=32)	2.4 (0.6-10.8)

Changes in Alcohol Consumption

■ Among subjects <u>without dependence</u>:

Adjusted Mean Changes in…	3 Months*		12 Months*	
	Control	Interv	Control	Interv
# drinks/day	1.5	-0.6	0.6	-0.7
# heavy drinking episodes	1.0	-0.9	1.0	-0.4
# days abstinent episodes	-0.3	-0.3	-0.2	-0.7

*No significant group differences. Adjusted for sex, alcohol treatment in the 3 months before enrollment, family history of alcoholism, any drug use, alcohol problem score, and alcohol-attributable medical diagnoses

Changes in Alcohol Consumption

- Among subjects <u>with dependence</u>:

Adjusted Mean Changes in…	3 Months*		12 Months*	
	Control	Interv	Control	Interv
# drinks/day	-3.4	-2.2	-4.1	-1.7
# heavy drinking episodes	-6.3	-3.0	-6.1	-3.5
# days abstinent episodes	5.9	2.5	6.5	2.8

*No significant group differences. Adjusted for sex, alcohol treatment in the 3 months before enrollment, family history of alcoholism, any drug use, alcohol problem score, and alcohol-attributable medical diagnoses

Changes in Consumption (cont.) Interactions

- Brief intervention effects on drinking (any measure) at 12 months were not moderated by:
  - Sex
  - Age
  - Race
  - Mental health-related quality of life
  - Homelessness
  - Alcohol-attributable medical diagnosis
  - Cognitive functioning
  - Readiness to change

Changes in Consumption (cont.)
Moderators

Unadjusted analyses	Control	Interv	*P*
Mean change in drinks/day (past 30 days) in subjects who: ■Used heroin/cocaine (n=8) ■Did not use heroin/cocaine (n=56)	+0.3 +0.6	-8.5 -0.1	0.10 0.31
Mean change in abstinent days (past 30 days) in subjects who: ■Were ready to change (n=14) ■Were less ready to change (n=50)	-3.8 +0.8	+4.3 -1.8	0.02 0.38

Changes in Other Outcomes
Stratified analyses (dependence, no dependence)

- No effects on readiness, mental health or emergency department visits (3 or 12 months)

- 3 effects at 3 months (among many tested)

  - <u>Anticipated direction:</u> Among <u>non-dependent,</u> smaller increases in problems (SIP score) (p=0.05)
    - Intervention   +0.7
    - Control   +3.8

  - <u>"Wrong" direction</u>: Among <u>dependent,</u> *smaller* improvements in physical health-related quality of life and *more* days hospitalized
    - Physical component summary score (p=0.04)
      - Intervention   +0.4
      - Control   +3.3
    - Days hospitalized (p=0.05)
      - Intervention   +9.0
      - Control   +3.2

Values are unadjusted mean changes

Changes in Other Outcomes

- Among dependent, and nondependent subjects, there were no significant differences by randomized group at 3 or 12 months on

    - Alcohol problems

    - Readiness to change

    - Physical health-related quality of life

    - Mental health-related quality of life

    - Hospitalization

    - Emergency department visits

Limitations

- **Secondary data analysis**

  - **Subgroup analyses**

    - Small sample sizes
    - Inability to adjust for baseline imbalances
    - Multiple comparisons
    - Exploratory, hypothesis generating

Conclusions

- In medical inpatients, brief intervention may increase receipt of treatment among alcohol dependent women, younger men, and patients with higher cognitive functioning

  - Having an alcohol-attributable medical diagnosis may moderate the effect of BI (among women)

- But in this setting, brief intervention's effects on consumption and other outcomes are uncertain.

  - Few convincing moderators of these associations

Implications

- The target of screening—unhealthy alcohol use—is often not amenable to single, brief intervention

- Research should begin to address when, for whom, and under what circumstances BI is or is not effective, and for what outcomes.

- Clinical implementation efforts should consider these complexities as dissemination of screening and brief intervention programs proceeds.

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THANK YOU